

WAR DEPARTMENT CIVILIAN PROTECTION SCHOOL, MAY 17 to 21, 1943

(900- 9:25 OPENING EXERCISES * * COLONEL McHATTON
CONFIDENTIAL INFORMATION

The three legs of the tripod on which our winning of the war depends:

1. The Armed Forces

The Army, the Navy, the Coast, Guard, the Marines. They are of paramount importance.

2. Production

If the production of munitions and supplies falls down, we will lose the war.

3. Civilian Morale

If the people fall down, then this war will fail. We are fighting for the maintenance of our limited form of democracy. When this war is over, if we lose this form of government, we will ~~lose~~ lose the war. You are fighting to give your children and your grandchildren the right to live as you and your forefathers have lived.

When this war is over there is coming a depression, a horrible depression, - one that will try the souls of men and women. We must realize that our interest in civilian defense is ~~not~~ not sufficient. If we lose those spiritual things that are bound up in our government, then we have lost the war.

There were short haired women and long haired men who said there would never be another war. We got the idea that we were immune, that we would not be attacked and that could not be attacked.

The Army realized that we had an enormous job. At the beginning of this war we had an Army of 160,000 men, - but we had a National Guard of 200,00 who were semi-trained. Then we had a group of 120,000 reserve officers, only 90,000 of whom had retained their commissions. We could have taken the entire Army and put it in a large stadium. - - - - That is what the President had in 1940.

Largely due to the spirit of pacifism in the United States the United States has never learned anything from our wars.

Take a look at Valley Forge.

We lost our Capitol in the War of 1812, - one of the few instances when a Capitol was lost and the nation survived.

We went into the Civil War unprepared, and we went into the Spanish American War unprepared.

The United States had a trained Army of veterans. Then she has 1,000,000 men, and they pulled out.

When we went into the World War, we pulled out before things were settled.

Now when we have come into World War No. 2, who has given us a chance? If England had not stepped in, - if England had fallen, we would have been invaded.

Behind England and the fighting spirit of Russia, we have been protected.

Monday, 9:00 - 9:25 Opening Exercises - Colonel McHatton - continued

The Army said, "You will have to train yourselves, but we will establish the War Department Civilian Protection School".

Now, we can not give as good ~~education~~ a course as we could give you at Stanford, but we will do the best we can.

Education does not come from without, - it comes from within. You can take a mere handful of good professors and get a good education, or you can come out a triple-plated damn fool, - just as you came in.

We want you to recognize that you are on the front line. If you weren't, we would not be here. This is one of the vital areas in the State of California. We are not running around just for the sake of running around.

But you have got to work.

An organization is not created by just ordinary men. We can make an organization by work. We can not create it by desire.

You ought to make great strides, and you ought to do it in a hurry.

IF IT HAD NOT BEEN FOR THE BATTLE OF MIDWAY, THE UNITED STATES CONTINENT WOULD HAVE BEEN INVADED BEFORE NOW.

IT IS NOT A QUESTION OF IF YOU WILL BE BOMBED. IT IS A QUESTION OF WHEN.

The decision is in the hands of the Japs.

If we have the spirit and the organization to make the attack, the Japs will fail.

This is an orientation lecture. Its object is to introduce you to the course. To tell you who we are, and what we want to do.

If you are absent too much, we will not give you a certificate.

We are running an Army School, and you should be governed accordingly. We begin and we ~~stand on time~~ intend to end on time.

If you sleep during the lectures, do so quietly, please.

If you want to ask questions, you are privileged to ask questions. If you wait too long before you ask them, you forget what you want to ask. So put up your hand, and you will be permitted to speak.

When it comes the time when a man knows it all, then he should go and jump into Humboldt Bay. If you can throw one of our professors off balance, do it. It will do him good. We will have discussions, and if we get to the end of our time, we will cut you off.

Do not hesitate to ask questions about Civilian Defense.

WAR DEPARTMENT CIVILIAN PROTECTION SCHOOL, MAY 17 to 21, 1943

9:30 - 10:20 A. M. Monday

MILITARY CIVILIAN PROTECTION - COL. McHATTON

My purpose in this lecture is to give you a background for your entire course. To give you the reason why certain things are being done. Just why we anticipate that civilian protection ~~will~~ come into the picture.

It is true that there are many things going on in this war that we do not like. We used to think ~~that~~ that there were non-combatants. That gentlemanly combat would respect certain members of the population, - women and children, and the aged or infirm.

But our enemies have set the pattern for the war. They have started it on their own pattern, and we have to fight them with every weapon that we have, so that we can bring back into the world those relationships that we cherish.

We don't like destruction. We see no reason for killing defenseless people, - ordinary men, women, and children, but that was started by our enemies, and continued by our enemies. - - None of us will be proud of killing a German child with a bomb. - - - But, if our enemies have done these things, we must mete out in the ~~same~~ same measure in order to win.

There has grown up in this nation of ours an idea that we ourselves as individuals are the government. We have looked at government with the idea that it should feed, clothe, and educate, and do for us what we used to do for ourselves.

Then, why doesn't the Government handle Civilian Defense. But the nation at large, as a whole, can not take a hold. There are some things that we must do as individuals.

There is just so much that every individual should know about what the Military is doing to defend our country.

I want to give you a little picture of the background of this war. I want you to see how things have changed, and to see how the Army, the Navy, the Coast Guard, the Marines and other armed services are giving you the protection you deserve, and how you must do something for yourself.

Let us first go back to the time when men first began to fight. Fighting was going on at the dawn of history, and I believe that fighting will go on until we have lost the primal instinct of self-preservation.

When men first fought, they used natural weapons - their hands, their feet, and their teeth. Naturally, the biggest man could bite, kick, and hit the hardest. Armies consisted then of one man each. They fought until one man was killed. Thus you had a mortality of 100%.

Then some little fellow decided to see whether he couldn't outrun the other fellow, and when he couldn't, he picked up a club, or a rock. This was the first step toward making David a possibility. - - - He made a weapon.

He then increased the distance between himself and the man he was fighting. If you can get at a distance, you might beat the other fellow..

They were a long time, - many centuries, - getting beyond individual combat.

Then they found out that two fellows had a better chance to lick the other fellow, and armies became larger. Battles became bigger, and the mortality ratio was reduced. More men were killed, but the percentage of death was reduced. Just as man has ~~increased~~ increased the size of his armies, he has reduced the percentage of deaths.

Well, to go on.

Families became tribes. Tribes became nations. Armies still increased in size. Cities began to develop. Cities were the beginnings of nations. The first great wars were between cities, - Athens and Carthage, Athens and Sparta, the War with Troy.

Cities dominated, and it was a long time ~~before~~ before nations were developed.

Cities represented production. There was the problem of supplies, and a big problem it was. Men increased their weapons. They discovered that if they built walls around their cities they would withstand their enemies better. So they used boiling oil, and hot rocks, and threw them over the walls at their enemies. And their enemies did the same, and in addition tried to break in the walls.

Sometimes the army could not get in to the city. Then they laid siege to it. They vilified each other over the walls. If a city had sufficient food and water they could often withstand the enemy. Sometimes when they besieged a city in this way they were caught in the rear by outlying forces of the city.

Then the army which was besieging the city developed the first incendiaries, which they threw over the wall so that they might land on the roofs of the city and set it afire. Arrows tipped with burning tar and oil, etc.

We need to remember that fire and sword have gone together through the ages in fighting wars.

Another step forward was the long bow of England. I have always admired intensely the ability of the English bowman to pull those bows. The bows themselves were six or eight feet high, - and the longbowmen could shoot 200 yards with them. - They won the Battle of Agincourt with long-bows. I often think of the story in Ivanhoe about Robin Hood. Robin, you ~~remember~~ remember, shot his yard arrow, and then cursed the Damascan who had tempered the armor of his foe.

The weak spot in the mediæval armor was the arm pit, for the armor had to be open there so a man could move his arm. A skilled archer would hit this vulnerable spot. Armor was heavy, and the man in armor had small chance to run.

It was these same old Germans, - these same old sons o' guns, who every so often went down to the plains of Italy. The Goths and the Visigoths. They wrecked Rome.

Then in 1313 they came again. They came with bombs this time, and a walled city was no longer of any use. They could batter down the walls with a cannon. They called it a bombard, and from this we get our word bombardment which we use today. Up until this time, everybody in a city helped fight. The women built fires, heated oil, rocks, etc. Children carried arrows, water, etc. Everyone fought to put out the fires set by the incendiaries which came flying over their walls. There was no such thing as a non-combatant.

But when bombardments came into the picture, a change came. A new system of warfare developed about 700 years ago. For armies went out of the city and fought in the fields outside. If they lost, then the city surrendered. Then came in the term non-combatants, and they were more or less respected by the armies.

Let's look at a few of the points involved in a war:

What was the Civil War? It was nothing more or less but a battle for Washington and Richmond. During the Battle of Manassas, called by the Northerners the Battle of Bull Run, many people of Washington took their baskets of champagne and food out to the hills and watched the battle of the Rebels. But the victory was on the part of the South, and they had trouble getting back to Washington.

Stonewall Jackson said, "Let's go on and take Washington." But Jefferson Davis said, "We will not invade. We will only defend." He was a damned old isolationist.

What would have happened if Washington had been taken?

As it was, we have four years more of war. Gettysburg was only a battle for Washington.

Let's take another example.

During World War I, when the Germans were sweeping around with the idea of enveloping Paris. One troop of soldiers rested, expecting to go on next night, but when they awoke, 200,000 men were there before them. An army had been moved by transport. They moved their men by any means available, trucks, private automobiles, and taxicabs! It scared the German General. The line moved toward Verdun, pulled a hole at the Battle of the Marne, and Paris was saved. France was victorious.

But this time, Paris fell. And where is France today as a nation? Of course, she may be brought in again when we have won.

The importance of cities. They are of vast importance. More so than ever because of supplies. The ingenuity of man has changed ~~the entire~~ things.

Up until the time of World War I, man had fought all battles at the rate a man could walk, or at the rate an animal could trot. But we have got into the air. So supply is more important today than it has ever been before. We have increased our weapons, increased our distances, and increased the size of our armies.

I remember some of the first pictures of the First World War. At first they had a lance with flags attached. It might as well have been a picture of the War of 1812.

Then hedge-hopping planes were introduced, - and underseas boats.

When this war came, we started with airplanes, - and speed of movement. In the First World War, the Germans developed a 70-mile cannon, the Big Bertha, - and they were lucky to hit Paris with it. Now we have guns who can shoot farther than that, and much more accurately. We have also increased the range of our rifles, and of our artillery.

Now we have stepped it up to thousands of miles.

Today we can launch a bomb from an airplane from a field here in America and drop it on Tokyo.

As we have increased the range of our guns, we have increased still further the size of our armies. Any man, woman, or child within range of an enemy plane or an enemy vessel is on the front line. We are on the front line. The entire nation is at war. There are 130,000,000 people in this war.

At any minute, a bomb may bounce over my head or yours.

There are an enormous number of deaths. Enormous in numbers, - but a comparatively small percentage.

We must all become defenders.

But, you say "What of the Armed Forces?"

We have been trying to set up a Warning System. Throughout the United States, at least three hundred miles back from the coast we have this system set up. We have spotters, and detectors, - and we have blimps and planes out over the sea.

All this is under the armed forces. The information received from these sources comes into a filter center which is run by the Army. All the information from all over the world comes into the ~~Filter~~ Filter Center, and then to the Information Center.

This is under the Interceptor Command and under the Navy.

The Information Center makes the decision as to what it is that is coming in, and if it is decided that it is an enemy plane or boat, or that it is an "unidentified target", then out comes a Warning from the Information Center.

This Warning is then in Civilian hands, and comes to your Control Center.

All this vast plan for gathering and filtering information is run by the Armed forces. Although, of course, there are volunteer Civilian Observers, who work under the direction of the Armed forces.

The business of the Armed Forces is trying to give you all warning possible.

When the Warning comes, the Army has other things to do, and the matter of Civilian Defense must be handled by the civilians themselves. For instance, the Army must:

1. Lay smoke screens over industrial areas. These are under the Service Command. These are not universal. They are only located at places the Army thinks are ticklish.
2. Barrage balloons.

These are to protect vital installations wherever they may be. These are handled by Army personnel. And by Army I am referring to all the armed forces, the Army, the Navy, the Marines, Air Force, etc.

When they send out information, they begin to:

3. Activate antiaircraft guns, and
4. Shore installations. ~~Fi~~

This is all Army work. These items of defense are in the hands of such groups as the Coast Guard, etc., whose activity is ~~designated~~ designed to keep the enemy from getting to you.

Where do we have men? We have men in North Africa, in Guadalcanal, in Iceland, and in England. They are at the four corners of the earth.

"We must maneuver to keep our enemy out of gunshot range of our people." This thing of staying at home is wrong. We want to fight in the other fellow's back yard. We want to keep the enemy far enough away to keep them from bombing us.

The Army is doing still another thing. They are:

5. Handling the Interceptor Command, - the Fighting Forces.

They must get up off the ground to meet the enemy.

Now the enemy will come in the dark - in the night. They will not come with a series of lamps on their wings. They are hiding, and they are coming in at the rate of 300 m. p. h. or more.

The business of the Interceptor Command is to keep 'em from getting through. There will be no light. No nothing. They will be just little flies shooting around in the great void of heaven. There is lots of chance to miss them. Some of these planes are coming through in spite of everything we've got.

Someone is going to bomb your city. When they get through, as they will in spite of all hell, they will drop bombs on you, and you must come into the picture. You represent SUPPLY, and CIVILIAN MORALE.

If you aren't organized, you will crumble. The army has tried to keep these planes from you, but they can't stop everything. It is up to you to teach the rest.

You must depend on yourself to help save your lives, your women, and your children.

In this war it is vitally important that we keep information which the enemy wants to know from the enemy. You in this class will have information they want, - for example, the Restricted Technical Manual, "Bombs for Aircraft".

Military defeat doesn't happen on any particular day. It occurs because of a combination of several things. You all have heard the old story,

"For the want of a nail, the shoe was lost; for the want of a shoe, the horse was lost; for the want of a horse, the rider was lost; for the want of a rider, the battle was lost; and all for the want of a horse-shoe nail."

Little things may account for important things, - ships that don't arrive, planes that don't perform, ships that sink, all these may be due to information that the enemy gets.

There is certain information that soldiers must know, of course. We are better off if we can keep as much information as possible from the enemy.

Here are two examples, two incidents that have happened during this war.

1. The first, we fumbled badly. That was December 7, 1943, - Pearl Harbor. At that time I was a newspaper reporter. A few days after Pearl Harbor we received certain information in our office. The column, "Washington Merry-go-round", startled us. It told how badly we had been crippled at Pearl Harbor. The number of battleships, cruisers, etc., lost was at variance with the information which we already had, and our editor planned to use the story on page 1. Then we received a message from the King Syndicate, who distributed the column, asking us not to use the story. The editor still felt he should use it. After all, it was news, and startling news, at that. Then we received an urgent wire from Pearson and Allen themselves, the authors of the column. And they said, "Don't use our column." The editor grumbled and fretted, but finally decided not to print the column. The code among newspaper men is that when you have the news and it is true, it is all right to print it. In this case, however, it might have been disastrous for us, for immediately after Pearl Harbor, Hawaii was very vulnerable. The Japs outgunned us about four to 1 in the Pacific. Had they known how badly crippled and how outnumbered we were, they might easily have attacked and taken the Hawaiian Islands. The ~~truth about the~~ exact state of affairs in Hawaii was withheld from the United States in order that the Japanese wouldn't find it out.

2. The second incident occurred near us. This information is CONFIDENTIAL. This happened on September 9, 1942, near Mount Emily, near Brookings, Oregon. At about six A. M., a sea plane was seen coming east from the coast. It was spotted and reported to the Filter Center. But no other spotter saw it. At about 9:00 A.M. a Ranger spotted and noted it. The plane was thought to be friendly by the Filter. Later a sub was seen off the coast. At 11:00 a spotter spotted a fire in the vicinity of Mount Emily.

NOW, we know that these isolated incidents are correlated, - that the plane was submarine borne, that it carried bombs, and that it flew back to sea. One 50-kilo incendiary bomb, a magnesium bomb, was found, but due to the weather conditions, - the fact that it had rained the previous night, - the fire did no great amount of damage, although with different weather conditions it might easily have proved to be a very disastrous fire. It is thought that the plane dropped another bomb, as we know that that particular type of plane is equipped to carry two bombs. However, only one has been found so far.

At first this fire was not reported to the Army. Later an Army Sergeant reported it to his Commanding Officer, who in turn reported to the bomb disposal squad. But it was not until three days later that this squad arrived at the scene.

This incident was common knowledge around the city, and got into the newspapers. No effort was made to keep this information from the enemy. The result of this bombing was ineffective, and this knowledge might have got to them.

Let us consider just what sort of information an enemy might want to get about a bombing. Let us think about a matter which appeared in the papers over this last week-end.:

Last Saturday evening, the Royal Air Force bombed Emden in Germany, and dropped something like 1500 tons of bombs there. Emden is an important

industrial city where Submarines are built.

Let us think about just what the Royal Air Force might want to know about the Emden attack.

First of all, they would want to know how soon they will need to attack Henden again, so that the people there can be kept from producing.

Second they would want to know how badly the transportation facilities were hit.

What plants were damaged? How badly were they damaged? How effective were the incendiaries? How did the bombing affect the morale of the workers? What civilian defense was there, and how effective was it?

They will want to know when they should go again, and what kind of bombs to use, and how to attack the next time.

When the Japs attack us, they will want to know whether their incendiaries are working. How much timber was burnt. They will want to know what the effect of their spot bombing was. What was hit? Was there any panic? How well protected are we from the standpoint of gas? If they use high explosives they will want to know how effective they were. They will want to know about our morale, - whether it is good or bad.

So, if some of our plants are comouflaged, we don't want them to know it.

All of you need to safeguard what information you know that may be of aid or comfort to the enemy.

I want to tell you just a little about the Army system of protecting information. Their information is classified, and it is given ~~in~~ only to those who need it for their own use. Information has three classifications:

1. SECRET.

This is very important information which may be of great value to the enemy, and it is possessed only by those whose jobs necessitate their having it. For instance, the information about the invasion of North Africa. Where the troops ~~were located, what~~ supplies ~~they had, and~~ what weapons were to be was kept under lock and key. Very few possessed this information.

2. CONFIDENTIAL

This information is only a little less important than Secret Information. It is never left on desks, and its value to the enemy is not quite so important to them.

3. RESTRICTED

This type of information is such that it must have a wide currency, yet we don't want the enemy to know it. And so it is not given to the newspapers.

The Army has made a study regarding WHY and HOW the enemy has got different information from time to time. They have found out that often people who have information give it away because of ~~curiosity~~

1. Conceit

Of a soldier or of a civilian. Perhaps he wants to show his girl friend that he is important. He tells her not to tell. But she can't keep it. It is hard to keep it. Everyone enjoys it. 99% of the people are susceptible to this kind of conceit.

2. Faith

In strangers. They assume he is a friend. This is not a good policy. A classic example of this faith is the incident of the Scale Map in the Mission Trails Building at the San Francisco World's Fair. At the end of the Fair this map was sold at auction, and it was later discovered that it had been sold to a representative of the Japanese Government.

3. Enthusiasm

3. Enthusiasm

People are interested in the war effort and like to talk about it. They like to talk about the production at the place where they work.

4. Ignorance

We sometimes give away military information because we don't know any better. History may call this a War of Underestimation. If you remember, in ~~the~~ Europe, the French underestimated the strength of the Germans. So, too, did the Poles, and the Lowlanders. The Norwegians didn't dream what they were up against.

WE thought our Navy was strong enough to knock the Japs off the Pacific.

The Germans underestimated Russia.

The Germans underestimated the British. Their blitz on London failed.

Let us assume that the Japs are strong, and that they have agents. Let us not begin to fool ourselves.

If you notice the reasons given above, you will notice that TREACHERY has been left out as one of the reasons.

The Germans are turning out of their colleges agents trained to get information in America, and to do sabotage work. But in this study of HOW the enemy gets information, sabotage comes way down the list.

Let us look closer home. The reason lies most likely with ourselves. We should safeguard carefully the information which we do know.

We will see a film which shows how information is received by the enemy which results in the blowing up of a ship, and another in which a train is wrecked because of information carelessly spread.

Some Don'ts

1. Don't talk about damage.

The enemy wants to know how effective their raids are.

2. Don't talk about troops, where, when or how they are moving. What concentration of units there is.

3. Don't talk about harbors, ships, and cargoes, - location of, defense of, mine fields, launchings, until officially announced

Air units, what movements by air, what materials are moved by air.

What experiments are being made, what orders have been given, what fortifications have been built. Where the anti-aircraft are located, what objects have been camouflaged.

The Japs will attack where we are weakest. Don't tip them off as to where our anti-aircraft guns are. Don't give them any military information. We all know that we can no longer receive the weather forecast as a rule. And we all know why.

Don't repeat rumors and harmful stories.

Avoid racial discussions, and discussions which are inimical to our friends or in criticism of our allies. Don't stress stories of the prowess of our enemies. Do not talk of the shortage or poor quality of our equipment

Throughout this war we have read in the papers about tactics of aerial bombing. We read about it for nine months, when the German planes were over England practically every day. Now, for over a year, we have been reading of the Royal Air Force flying over Europe. We Americans are doing a lot in the South Pacific and over Europe now.

Before every raid, there is a detailed study of aerial strategy.

There are three ways to win a war:

1. By defeating an army. By military subjugation. This is the way it was done in early wars.
2. By destroying the enemy's power to produce war materials.
3. By destroying the enemy's will to fight, their political unity, their will to continue fighting.

When we fly over Europe we always have at least one of these three in ~~our~~ mind:

1. To discourage the people
2. To destroy a certain production plant
3. To destroy the enemy

A military strategy is built up for each of these objectives.

Example:

The strategy of the German air Force is to be an aid to the army, and aid to the ground forces. They are cooperators. The Air Force is a dependent unit to the Army. They go ahead to blaze the way for the German ground forces. Cf. Holland and Norway.

As long as the Germans used that system they never met defeat. When they left that system and went to England to destroy her will to fight, they failed. Until then, they had not been defeated.

But the Royal Air Force worked independently to destroy the German's power to produce, and to get a victim in the sky.

There are several things in connection with this which should make us stop to think. - the ways in which the British were weak.

They were equipped to work independently. They were strong when it came to protecting the evacuees at Dunkirk. They did maintain superiority there. But they were not so good when it came to supporting the ground forces during actual combat.

We Americans have not yet well established just which policy we are working on. Politics enter in here. Cf. Seversky and his critics. Our Army says that our planes should be auxiliary, that behind every plane built there should be army on the ground.

When the Japs attack our coast they will have a well planned strategy.

I want to refer you to a speech which was delivered just last month by Curio Sat. It is a restricted document. I will tell you in part what it was about. "They are working toward absolute air supremacy that places emphasis on speed. Despite the fact that we are constructing with speed as the principal goal, yet we are having both offensive and defensive fighting. That we are still on the offensive is a matter of world admiration. There are more Japanese on Kiska Island today than ever before. From the standpoint of military strategy, the job has been well done. The fighting spirit of the Americans is dependent upon their productive strength. Unless all the Japanese material resources are used to bring American to her knees. . . . Both in production and in military operation. We cannot effect the American people unless an air raid is carried out, for the Americans are stubborn and like to fight. But in the ocean we can do it. We are just waiting until we are ready to attack." (End of Sato speech.)

Sato's speech indicates that their strategy calls for attacking America and destroying our weapons of war.

Bombers ? to us, to England, Japan, and America are very similar.

In considering tactics of aerial bombing we need to consider:

1. How far will bombers fly?
2. How fast will bombers fly?
3. How accurately can they hit their target?

What pattern of attack?

A. First, how do bombers attack?.

Compare our way and the R. A. F. way.

The R. A. F. builds bombers designed to carry big loads, - ten tons, as a maximum load, and to be carried for short missions. They fly as low as they can, in order to hit their target more accurately, and they usually fly at night, drop their bombs, and try to get back to their bases without fighting.

We, the Americans, like to go over in the day time, and challenge 'em to fight us. And we can fight, too. With our Norden Bomb sight, we do precision bombing. We carry half the load that the English bombers do, but because of greater accuracy, we do as much damage.

Thus far, the Japanese have a combination of these two systems. Their sight is not so good as ours, and they do not carry such big loads as the English. At Pearl Harbor, their only success so far, their great effectiveness was due to low flying.

B. How do bombers fly?

In formation to and from work, but they break out of formation during action.

Reasons for formation flying.

1. To direct defensive fire power
- 2 To direct offensive fire power
3. Minimum exposure
4. To expedite movement
5. For tactical control

They fly in a set design, so that they may divide and separate, as football players might do.

x
x x
x x
x x
x x
x

may control more easily if planes are in formation. Tactical control is possible for. In javelin actual attack, however, they go in waves so that anti-aircraft fire cant concentrate on any one group. It is likely that until they hit the coast, Japs will fly in formation.

C. How high will bombers fly?

ONLY AS HIGH AS THEY NEED TO. At Pearl Harbor, because of the element of surprise, there was no need to go up. But if Europe is well defended, they will fly high. A height of about 1000 feet is about what they like. If they fly lower, the blast effect of the explosions effects their planes.

~~These factors will keep 'em up:~~

These factors will keep 'em up:

1. Anti-aircraft fire
2. Barrages
3. Fighter planes which attack them
4. The nature of the terrain
5. The blasts from their own explosions

D. How far will planes fly? What is their range?

This varies with the various types of planes.

It is not at all uncommon for big bombers to go from London to Berlin with heavy loads, that is 575 miles, 1150 miles for the round trip, - and they have no trouble at all going and coming back. It is a convenient distance for them.

They go to Genoa, - and the Czecho-Slovakia. 1500 miles is not too far for a big ~~heavy~~ bomber to go with a big load.

Medium bombers will go about the same distance.

The Doolittle planes went about 800 miles.

From the standpoint of potentials, we can paint a different picture. We Americans and the Japanese have planes which have a range of 5000 miles. It is possible to fly non-stop to Hawaii. We believe that the Flying Fortresses have a range of from 3500 to 5500 miles. We have some other planes that have a range up to 5000 miles and maybe a little more.

Seversky says the amount of fuel and efficiency of its use determine how far a plane can go. Double the range of a plane, and you double its striking power. Seversky says that the range of a Condor may be from 5000 miles to 7000 miles! We had previously thought that the limit of its range was 5000 miles. Some say that improvement in fuel would give the Condors a chance at 12000 to 15000 miles, - that is, if the amount of fuel necessary for a trip were cut in half, they would be able to travel twice as far on their top load.

We have a healthy respect for research that is being done in Germany. They have developed a different and very efficient fuel.

The Germans have devised a plan whereby (in Condors, or certain other planes) they can disengage their motors at cruising speeds and fly for quite a distance using no fuel at all.

Thus we see that the range of planes is always on the increase.

General Sato thinks that the Japs have technical skills comparable to our own. Our planes can easily fly 2500 miles to Hawaii. We can fly 2900 miles to Kiska.

We give below some information on the loads, speed, ceiling, and range of different bombers.

	Fighters	Medium bombers	Heavy bombers
Gross Load	1200 lb.	2500 lb.	9000 lb.
Speed (Maximum)	350 m.p.h.	260-300 m.p.h.	300 m.p.h.
Ceiling (with load)	20,000 ft.	25,000 ft.	25,000 ft.
Range (with load)	900 mi.	1800 mi.	2200 mi.

The R. A. F. Sunderland Bombers can carry up to ten tons. But this chart above is approximately true for American bombers.

E. How high will planes fly?

They may fly up to 25,000 or 35,000 feet. You can see a plane which is flying 18,000 feet high. When they are beyond 20,000 feet, you can not see them any more. Planes cannot bomb accurately from higher up.

F. How accurately do bombers bomb?

Our own bombers with the Norden bombsight can bomb within one % of their altitude. For instance, if they are 20,000 feet high, they can hit a target 200 feet across, if at 15,000 feet, the usual height, they can hit a target 150 feet across, if at 10,000 feet, they can hit a target 100 feet across.

A strategy is figured, dependent upon this precision, upon the target, and upon how high they are flying. If they fly at 500 feet they will figure that they need to send three bombers in order that they will be sure to hit their target. If at 10,000 ft., they will send five bombers, at 15,000 ft., seven bombers, at 20,000 ft., 10 bombers, and at 25,000 ft., 15 bombers. Of course, the accuracy of the attack will also vary with the bombardiers, the weather, etc., etc., etc.

G. How fast do planes fly?

Bombers with a load do not travel much faster than 300 m. p. h., perhaps a little slower, - the maximum is probably 300 m. p. h. Without a load, they may fly 350 m. p. h. Fighter craft, - Spitfires, - go 387 m. p. h., and the P-38 travel nearly 400 M.P.H. Doolittle's planes traveled about 275 m.p.h. with the bomb loads they had.

Pattern of Attack

The British sent fighters in front of the bombers to draw the anti-aircraft fire and to show the bombers the location of the anti-aircraft batteries. Lately we have increased the weapons on the bombers and so they are not escorted as much as they used to be. We have more range on our bombers, because their guns are bigger, and they can shoot sooner.

Planes need to be high, and to have good visibility in order to hit a precision target. The Japanese bombardiers are about as good, and their strategy is about the same as ours. But their bomb-sight is not so good.

DOOLITTLE SET A PRECEDENT

Statistics on the Doolittle raid. There were sixteen planes, big and medium bombers. They carried about two tons of bombs each. One-half were H. E. bombs, and one-half were incendiaries. It is reasonable to believe that the Japanese will carry the same loads, and that their attacking planes will be carrier borne. The targets here for the Japanese are largely incendiary targets. If they believe the naval establishments here on the Pacific Coast are important they will use H. E. bombs. Doolittle left his carrier about 800 miles from Tokyo, and probably flew another thousand miles. He may even have gone nearly 2500 miles.

We think they could float forty planes.

May get 'em 800 miles, or 400 miles offshore, as Doolittle originally intended. (They met a cargo boat and bombed it. Then they feared the boat might have radioed their presence to Japan, and so they took off from their carrier further off shore than they had intended to.) It is a wide Pacific, but if we can do it to them, they can probably do it to us.

Rest assured, when they hit us, they will hit us where it will hurt the worst, if their strategy calls for super-accuracy, they will use dive-bombing tactics.

We lost every single plane in the Doolittle raid.

We shall give you information about the Aircraft Warning Service and will include the Airraid Warning System. These are two separate services. They have two separate functions, but the entire function of both is ~~to accumulate, evaluate, and disseminate~~ the accumulation, evaluation, and dissemination of information concerning enemy aircraft. We will consider where the Aircraft Warning Service leaves off, which is where the Airraid warning system takes up. //service/

The first, the Aircraft warning ~~system~~, is for the Army, - the second, the Airraid warning ~~system~~, is for the civilian.

Aircraft Warning Service

There are several ways to meet an attack:

1: To have enough planes in the air at all times to meet any possible anticipated attack. This is, of course, not possible, nor practicable. This would constitute an AIR ALERT twenty-four hours a day.

2. And this is a possible way. - a PARTIAL AIR ALERT

To have several planes in the air at all times along the probable lines of enemy approach. This is possible, but not profitable.

3. GROUND ALERT

This is a more efficient method. To have planes on the ground, but ready to meet an alert. But this type of preparedness needs an Aircraft Warning Service.

Under this system, one of the first and most important needs is a good group of ground observers. Throughout the length of our coastline, in a strip approximately 150 to 200 miles wide, is a complete network of stations six to 8 miles apart in every direction. Each observation post must be manned 24 hours daily, every day, every week, and every month of the year, in order to function.

Just consider the large number of people necessary to man these posts. They are all manned by civilian volunteers. If we assume that each person serves two or three or four hours per week, it will take 50 to 150 persons to man each post.

This is a direct contribution to the defense of this country in an active phase. These people are the ones who will warn us in the event of an enemy air raid.

The position of these people is a little different from you who are in passive defense. (The person who is in passive defense minimizes the effect of the enemy after he gets past the observers.

Let us see how these people who are in the aircraft warning service function. These people are really observers. They report to the filter center every single plane that passes over their post. Where are the posts? They are spaced over the entire area. They gave the telephone company a map, with the request that the phone company indicate every telephone in entire rural area on the map. The telephone company put circles around the spots where the phones were located. They ~~found~~ found that these phones covered the area quite thoroughly. Spots which were not covered by existing phones had phones installed. Most of the observation post phones are farm or regular residential phones. Where extensions have been necessary, they have been put in by the government. Toll service charges are paid by the government. Others, those in private homes, are free. Many observation posts are manned by the people who live where the phone is. They report every single plane that comes along. These report calls go in to what is ~~known as~~ ^{known as} a Filter Center. All reports are recorded on a Flash Message form. Information asked for:

1. Number of planes, - if the observer can tell, or if there were few or many.
2. Type, - Single, bi-motored, or multi-motored
3. Altitude, - Low, high, very high
4. Are they seen or heard?
5. Observation Code No., to identify the station. Cf Roger 20.
6. Direction of plane from the observation post
7. Approximate distance
8. Direction planes are traveling

How is this information given in? Within 15 seconds.

Monday P. M. 2:00 to 2:50 P. M. Captain Campbell Aircraft Warning Service

Let us take for example the way in which this situation would be handled, - two singlemotored planes, flying high. The message would go at the govt. rate, collect. At night, the message would go to Redding, and in the daytime it would be sent to San Francisco. The observer would say "Army Flash". At the Filter Center the telephonist would say, "Army Go Ahead". In the filter center there is a map of the area. Around this map are tellers who have certain equipment ready. The one nearest this point on the map receives the call. "Two planes, single, high, seen, Roger 20, north, 2 mi., west." This map is complete, showing air lines, cities, etc, including all observation posts. Pips used to mark the course of theplane, ~~with a mark~~

S ingle
B imotored
M ultimotored
U nknown

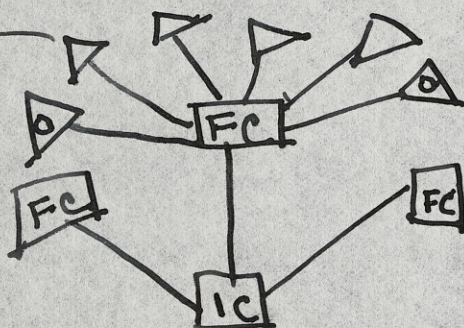
VH very high
L ow
U nknown
H igh

Pips have a green side and a red side.
If planes are seen, the green side is used.

Pips are put on the map to show the location of the plane as repot d. Then, to the east, a second observer turns in a report. We have now two reports, fairly accurate, - that is, they tally with each other. When a third report comes in, an observer determines whether these are all the same planes. Then some plastic arrows are put in the map instead of the pips. (Blue, green, and red) A clock divides up every five minutes. There is a different color for each five minute period, - blue, green, and red arrows are put out. Blue arrows are laid across the map and a target display stand is prepared. We have two planes. Target 49 is two single-motored planes flying high. From length of color of arrows we can estimate the speed of the ~~ix~~ planes.

Why do we have a filter center? To determine whether the reports are accurate or not. If several sets of data don't li e up exactly they can say, "It is probably the same.

Then from the filter center, data goes to an Information Center



An Information Center serves several Filter centers . The whole area is on one map, divided into four sections (1 for each Filter Center)
They are going to get their information from

the Filter Centers. The tellers at the information center receive the information and tell the operator around the board. The tellers will get information as to speed, etc. of the planes. In the information center there will be set up a duplicate of the target stands in the filter center. The target must be identified. The air raid clerk is supposed to identify the plane. On the balcony near the map are the following:

1. Representative of the Civil Aeronautics Authority.
2. A representative of the Bomber Command who knows where our bombers are supposed to be, where they are going, etc.
3. A representative of the Navy.
4. A representative of the Federal Communications Commission

The Air Raid Clerk says: "Do you claim this?" "Yes, it is ours," the Navy says. If the planes are identified, the target put on the map is a green tag, if it is unidentified, the target is red.

A plane traveling 300 m.p.h. travels five miles per minute.

When the plane is unidentified, we sent interceptors out right away. The Interceptor Command has two-way communication with their Interceptor planes.

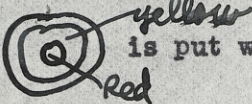
~~XXXX~~ PURSUIT OFFICERS MAP

Plots and gives by radio directions to the pilot. Continuous. The clerks plot continuously and the pursuit officer can make corrections and instruct the pilot. Meantime, there are also barrage balloons and ack acks which are set to work.

Where does the Air Raid Warning System come in?

In Airraid center. The Civil Air Raid Warning Officer is a civilian.

Suppose target 49 is an enemy. A district warning center.

Transparent with a red center  is put where the planes were reported. We have time to issue a yellow warning.

Minutes	5	miles	25 to edge of red
"	12		60 to edge of blue
"	30		100 to 150 to edge of yellow

Humboldt County Sheriff's Office gets a yellow alert. Then all the Control Centers get it in relays. It is then spread out from there. When the blue cuts out, we get